CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE ON DISARMAMENT

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Remarks by Ambassador James Leonard on Seismic Data Exchange and the Canadian Working Paper (ENDC/251) at Informal Meeting on 13 August 1969

I would like to comment first on the general subject of seismic data exchange and then to make some specific suggestions regarding the Canadian proposal.

As many of you will recall from the last meeting of our spring session, Ambassador Fisher, speaking for our delegation, said that we believe seismic data exchange would serve as a useful complement to a comprehensive test ban, which in our view would have to include on-site inspections for adequate verification. On the basis of our belief in the value of seismic data exchange, we have been making efforts, both on our own and with others, to bring about greater cooperation in this field.

For example, considerable progress in seismology has resulted from research which the United States Government and private United States institutions have performed and published, and from seismic data made available through the operation of the US-sponsored World-Wide Standard Seismograph Network (WWSN). This network now has 115 seismic stations, including stations in several states represented in this committee. In addition, the Montana Large Aperture Seismic Array continues to be operated as a research tool to provide data for evaluation of the detection capability of such arrays. We are, in cooperation with Norway, installing a second large array -- the Norwegian Seismic Array, called NORSAR -- which we hope will be completed this fall. Finally, we are pleased to announce that we are going forward with Project Rulison, an underground nuclear explosion for peaceful purposes aimed at developing the technology for increasing the production of natural gas. The project is now tentatively scheduled for September 4, 1969. As we explained in our working paper on seismic investigation (ENDC 252), this experiment will help in our efforts to

facilitate world-wide evaluation and comparison, to the extent that the data are exchanged, of the seismic information gathered on such events.

In line with this demonstrated interest in seismic research, the United States stands ready to make available a list of seismic stations from which we would be willing to supply records in a world-wide exchange of data, as suggested by our Canadian colleagues. We are also willing to supply all the pertinent data on technical characteristics of these stations.

In view of our own readiness to cooperate in data exchange along the lines suggested by Canada, we, of course, hope that other countries whose participation would increase the value of the exchange will also join in. Carrying out the Canadian idea would be a useful step in implementing UN General Assembly Resolution 2455, and would be welcomed as a sign of progress on a question to which the General Assembly has attached great urgency.

Our technical experts have carefully studied the information requirements for a possible questionnaire, and their conception of what would be most useful has been passed out to each delegation (see attached suggested revision). With your forebearance, I would like to go through the revisions and explain the reasons we are putting forward these suggestions for consideration.

First, you will note that we have suggested two different categories of stations about which information would be provided. Category (a) would now cover conventional seismograph stations and (b) would cover array stations. This seems to us a more useful distinction than that now made by the Canadian proposal between photographic and tape recording types of stations. Since there are other common types of seismograph recordings, such as smoked paper and hot wire, the categories we suggest would insure that governments would know how to respond for any type of seismograph.

Second, under sections (a) (iii) and (b) (iii), dealing with the instrumentation and components recorded, we believe that a response curve for each instrument should also be provided. Our technical advisors believe that information on response curves is very desirable for any significant data exchange because of the need to provide a basis for accommodating differences among the various instruments in use.

Third, under the category (b) we propose, we have added two more requests, (iv) and (vi), which involve, respectively, coordinates of array points and a list of components which record on a parallel visual basis. This information would also be helpful to participants in deriving maximum possible utility from the data exchanged.

Finally, if our suggestions are incorporated it would be possible to delete the requests under (a) and (b) of the Canadian paper which call for full operational curves to be provided, since this information would already be covered. In our suggested revision we have consolidated in the last paragraph the statements regarding the time window within which governments would provide records, and the availability of original magnetic tape recordings.

In conclusion, Mr. Chairman, I would like to express my delegation's hope that the Canadian proposal will help us to make badly needed progress in the near future. For our part, we are very appreciative that the Canadian delegation has presented its suggestions to this committee. We think these suggestions are practical and valuable.

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Suggested Revision of Requests for Technical Information

(a) Conventional seismograph stations

(i) Name of station

(ii) Co-ordinates of station

(iii) Instrumentation and components recorded. (This should include operational magnification at one second periods for short period and broad band seismographs and at 15 or 20 seconds for long period instruments. Also, a response curve for each instrument should be provided.)

(b) Array stations

(i) Name of station

(ii) Co-ordinates of station

(iii) Instrumentation and components recorded. (This should include operational magnification at one second periods for short period and broad band seismographs and at 15 or 20 seconds for long period instruments. Also, a response curve for each instrument should be provided.)

(iv) Coordinates of array points

(v) A general account of the instrumentation geometry of the array.

(vi) A list of components which record on a parallel visual basis.

It would also be useful to know the time window within which the Government of ... would be prepared to supply the original records or, as applicable, photographic copy, magnetic tape copy, or good quality microfilm (16, 35, or 70 mm). It would also be useful if the Government of ... could indicate how long an original magnetic tape recording could be made available before the tapes were erased and re-used.